

A new genus and species of the clearwing moth tribe Osminiini from the Oriental Region (Lepidoptera, Sesiidae)

Oleg G. GORBUNOV¹⁾ and Yutaka ARITA²⁾

1) Institute for the Problems of Ecology & Evolution, Russian Academy of Sciences, Leninsky prospect 33, Moscow 117071, Russia*

2) Zoological laboratory, Faculty of Agriculture, Meijo University, Tempaku-ku, Nagoya, 468 Japan

Abstract A new genus and species, *Akaisphecica melanopuncta* gen. et sp. n., tribe Osminiini, is described and figured from Vietnam. A key to genera of the Osminiini of the Oriental Region is presented.

Key words Sesiidae, Osminiini, *Akaisphecica melanopuncta* gen. et sp. n., taxonomy, Oriental Region, Vietnam.

A small collection of clearwing moths from Southeast Asia belonging to the Muséum d'Histoire Naturelle Genève, Switzerland (MHNG), turned out to contain three specimens of one species habitually very similar to species of the genus *Heterosphecica* Le Cerf, 1916, but having some important differences. Here we describe it as a new genus and species, *Akaisphecica melanopuncta* gen. et sp. n.

Although the fauna of clearwing moths of the Oriental Region is at present one of the least known, certainly comprising numerous new synonyms both at the species and genus levels, we still dare describe a new genus. One of the reasons for this is based on the fact that a restudy of the type species of the genera of the tribe Osminiini from the Oriental Region has been finished. All of them have been figured in our article (Arita & Gorbunov, 1995).

Akaisphecica Gorbunov et Arita, gen. n.

Type species: *Akaisphecica melanopuncta* Gorbunov et Arita, sp. n.

Medium-sized clearwing moths with alar expanse 26.0-27.5 mm, with intensively red-orange or red coloration of thorax, legs, abdomen and wings (Fig. 1). Head with antenna relatively strongly clavate, without cilia in male; proboscis well-developed; maximum width of head less than that of prothorax. Distally 8th tergite of abdomen with double, spiralling, filiform, very long appendix of hair-like scales (Figs 1, 4). Hind tibia and tarsus entirely tufted with long hair-like scales, their total length somewhat longer than that of abdomen. Forewing (Fig. 2) with vein R_5 missing (confluent with R_4 ?), other veins separated; tip of R-stem reaching midway between bases of veins R_2 - R_3 ; anterior transparent area of forewing with a large, mat black, rounded spot medially. Hindwing (Fig. 2) with vein Cu_1 arising from somewhat before lower angle of cell, veins A_1 and A_2 well-developed. Male genitalia with tegumen-uncus complex narrow and small (Figs 3a-b); uncus densely covered with hair-like scales; gnathos undeveloped; valva narrow quadrangular, densely covered with long hair-like scales on distal half, without crista sacculi (Figs 3a, c); saccus relatively broad and long, flat basally; vinculum narrow, about 1.5 times as long as saccus; aedeagus (Fig. 3d) relatively broad, about 1.5 times as long as length of valva; vesica with small, numerous,

* Visiting Scholar of Zoological Laboratory, Faculty of Agriculture, Meijo University, Tempaku-ku, Nagoya, 468, Japan

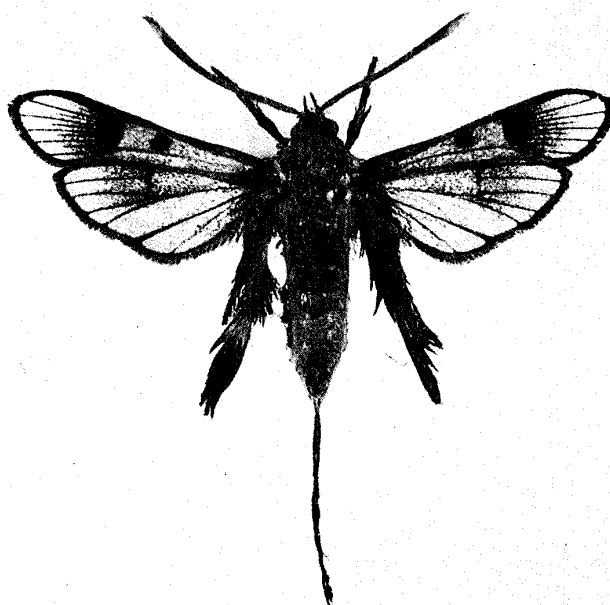


Fig. 1. *Akaisphecica melanopuncta* gen. et sp. n. Holotype, male (MHNG), alar expanse 27.5 mm.

rounded cornuti.

Diagnosis. This new genus is closely related to *Heterosphecica* Le Cerf, 1916 and *Melanosphecica* Le Cerf, 1916, but differs from them in the intensively red-orange coloration, presence of a double, spiralling, filiform appendix on the 8th tergite of the abdomen, and a large, rounded, black spot on the anterior transparent area medially of the forewing. Besides that, *Akaisphecica* gen. n. can be easily separated from those genera by the rather robust thorax (maximum width of head less than that of prothorax, but in the genera compared width of head more than that of prothorax), and in the structure of the hair-like tuft of the hind leg (tibia entirely and two basal segments of tarsus with a hair-like tuft in *Heterosphecica*, distal half of tibia and two basal segments of tarsus in *Melanosphecica*). Fore- and hindwings of the new genus are rather broader than those in *Heterosphecica* and *Melanosphecica*, but venation has in fact no significant differences, only the tip of the R-stem of the forewing reaching about midway between the bases of veins R_2 - R_3 (to base of vein R_2 in *Heterosphecica*). From *Aschistophleps* Hampson, [1893], this new genus is distinguishable by the robust body, presence of a filiform appendix on the 8th tergite of the abdomen, and structure of the hair-like tuft of the hind leg (distal half of tibia and first tarsal segment tufted in *Aschistophleps*); besides that, *Aschistophleps* has relatively long hind tibia and tarsus.

All the known genera of the tribe Osminiini, including the new one, of the Oriental Region can be determined by the following key :

1. Maximum width of head less than maximum width of prothorax ; both hind tibia and tarsus entirely tufted with hair-like scales ; 8th tergite of abdomen in male with a double, spiralling, filiform appendix of very long hair-like scales (Figs 1, 4) ; anterior transparent area of forewing with a large rounded spot medially *Akaisphecica* gen. n.
- Maximum width of head more than maximum width of prothorax ; three apical segments of hind tarsus not tufted with hair-like scales ; 8th tergite of abdomen without any appendix (Fig. 5) ; anterior transparent area of forewing, if present,

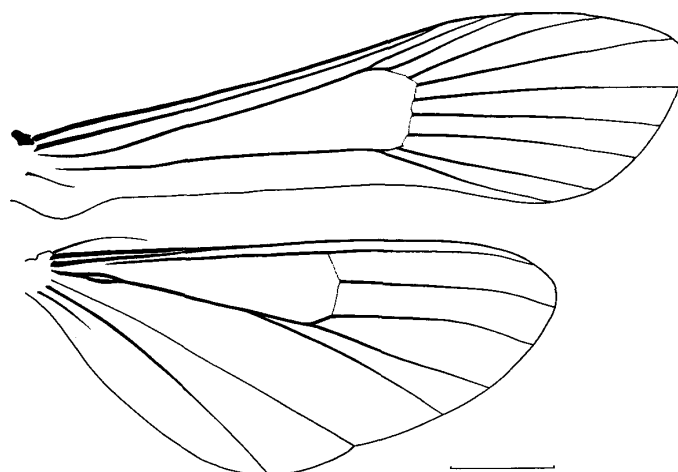


Fig. 2. Wing venation of *Akaisphesia melanopuncta* gen. et sp. n. Scale bar : 2.0 mm.

- without spot medially2
2. Forewing entirely opaque, often with strong, metallic sheen ; scales of hindwing with strong, metallic sheen*Melanosphecia* Le Cerf
- Forewing with transparent areas ; fore- and hindwings without metallic sheen ...3
3. Hind tibia and tarsus about twice as long as abdomen ; only apical half of hind tibia and first basal segment of tarsus tufted with hair-like scales*Aschistophleps* Hampson
- Hind tibia and tarsus only slightly longer than abdomen ; hind tibia entirely and only two basal segments of tarsus tufted with hair-like scales*Heterosphecia* Le Cerf

Etymology. The name of this new genus *Akaisphesia* partly derives from two closely related genera, *Heterosphecia* and *Melanosphecia*. The name “akai” is derived from the Japanese word meaning red, and corresponding to the ground coloration of the type species. Gender is feminine.

***Akaisphesia melanopuncta* Gorbunov et Arita, sp. n. (Figs 1-4)**

Description. Male (holotype) (Fig. 1). Alar expanse 27.5 mm ; body length 13.5 mm ; forewing 12.5 mm ; antenna 8.4 mm. Head : antenna black with a small yellowish-sandy spot externally near apex ; frons grey-brown with violet sheen ; vertex black with greenish sheen ; labial palpus black with a narrow, pale yellow to white stripe extrolaterally ; pericephalic hairs red-orange. Thorax : patagium black with bluish sheen, with a few red-orange scales ; tegula red-orange with a mixture of black scales at inner margin distally ; mesothorax black with bluish sheen, mixed with red-orange scales, especially caudally ; metathorax red-orange to red ; thorax laterally dark grey with strong violet sheen. Legs : fore coxa black with a mixture of individual red-orange scales basally ; hind tibia and tarsus entirely and strongly tufted with hair-like scales, red-orange to red with a few black scales basally ; spurs white. Abdomen : dorsally red-orange to red ; tergite 1 black with violet sheen ; tergites 3 and 4 each with a large medial spot black with violet sheen (the spot on third tergite larger) ; tergite 8 black with two, very long, nearly as long as abdomen, black, spiralling threads of hair-like scales (Figs 1, 4) ; ventrally sternite 1+2 dark grey with violet sheen, all other sternites red-orange ; anal tuft undeveloped. Forewing : basally black ; costal and anal margins red-orange with a mixture of individual brownish scales ; Cu-stem basally red-orange, distally brownish ; discal spot and veins within external transparent area mat black ;

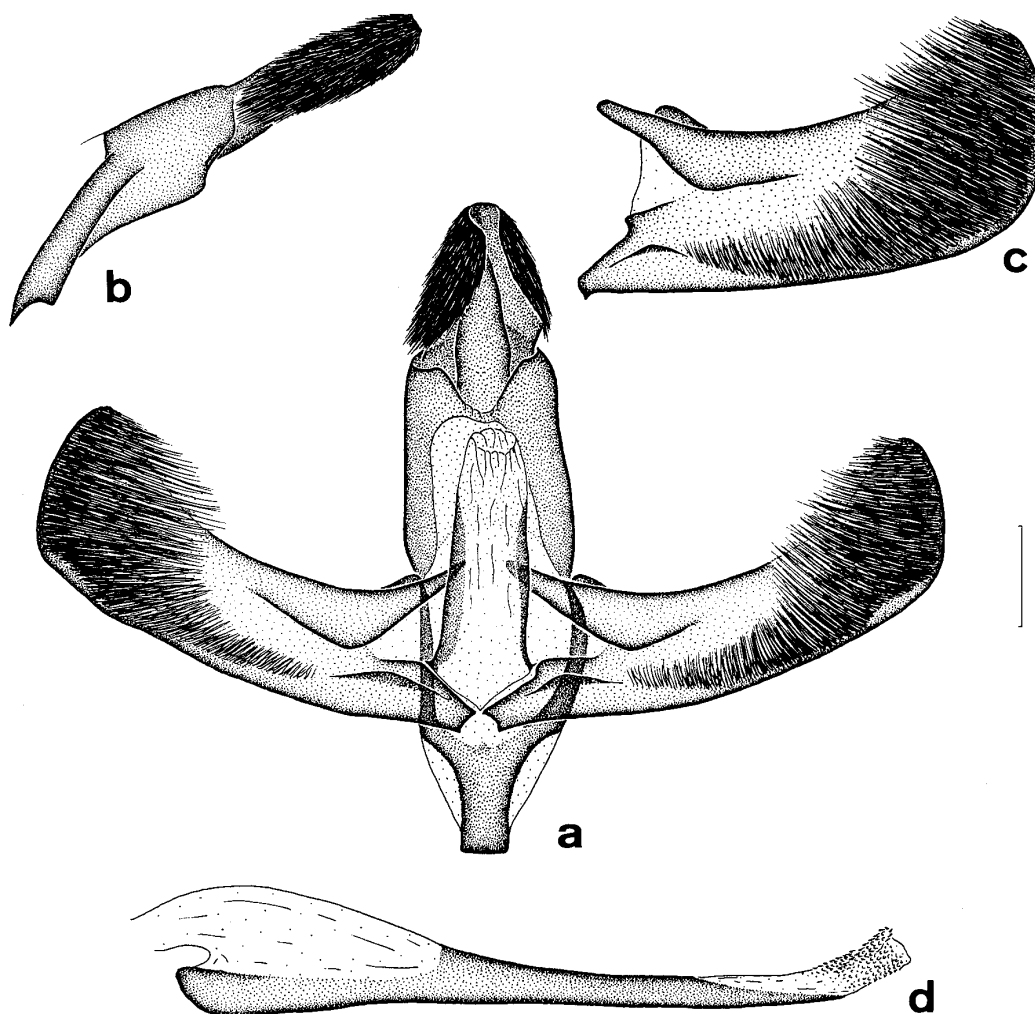


Fig. 3. Male genitalia of *Akaisphecica melanopuncta* gen. et sp. n. Genital preparation No. GA-007 (MHNG). a. Common view, unpressed. b. Tegumen-uncus complex, lateral view. c. Valva, pressed. d. Aedeagus. Scale bar: 0.5 mm.

apical area undeveloped; transparent areas well-developed; anterior and posterior transparent areas densely covered with brownish semihyaline scales; besides that, first one with a large, rounded, mat black spot nearly level to discal spot of hindwing; external transparent area extremely large, divided into 6 cells, in proximal half densely covered with blackish to brown, slightly hyaline scales and with a narrow, longitudinal, black stripe between veins R_3 - Cu_1 ; cilia black. Hindwing: transparent but covered with red-orange scales basally to discal spot and in anal part, and with black scales distally of discal spot; veins in distal half black, in basal half red-orange; discal spot and outer margin narrowly black; cilia black.

Genitalia (Fig. 3) (genital preparation No. GA-007). Tegumen-uncus complex (Figs 3a, b) small and narrow; uncus entirely covered with rather short hair-like scales; gnathos undeveloped; valva (Figs 3a, c) quadrangular with a disto-dorsal angle slightly turned-up, densely covered with long hair-like scales on distal half; saccus relatively broad and long with a flat base; vinculum narrow, about twice as long as saccus (Fig. 3a); aedeagus (Fig. 3d) relatively narrow, about 1.5 times as long as valva; vesica with small, numerous, rounded cornuti.

Female. Unknown.

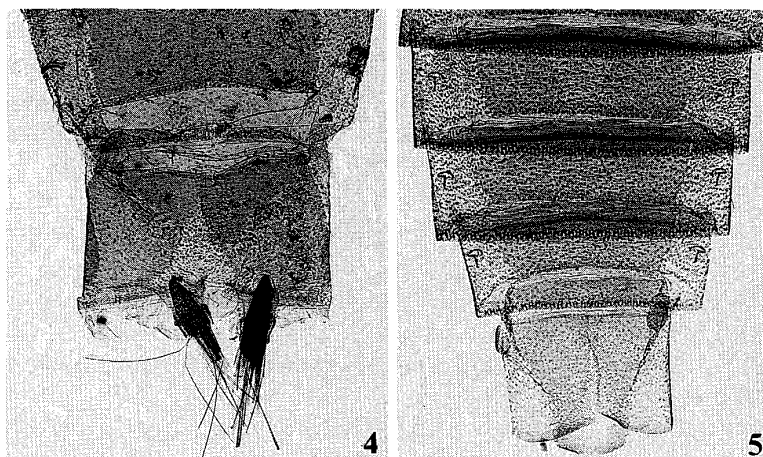


Fig. 4. Distal segments of abdomen of *Akaisphecica melanopuncta* gen. et sp. n. Male, paratype. Genital preparation No. GA-007.

Fig. 5. Distal segments of abdomen of *Heterosphecica soljanikovi* (Gorbunov, 1988). Male, Genital preparation No. GA-005 (MHNG).

Variability. Coloration virtually constant, slightly variably only individual size: alar expanse: 26.0–27.5 mm; body length 13.5–14.0 mm; forewing 11.5–12.5 mm; antenna 8.4–9.0 mm.

Diagnosis. From all species of the genus *Heterosphecica*, this new species differs clearly in the rather larger size and both broader fore- and hindwings, in the intensively red-orange to red coloration of the thorax, hind leg, abdomen and wings, and, especially, in the presence of a very long, spiralling, double thread of hair-like scales on the 8th tergite of the abdomen. From species of the genus *Melanosphecica*, this new species differs in having transparent areas of the forewing, in the absence of strong metallic sheen on the wings, as well as in the presence of a long, double, filiform appendix on the 8th tergite of the abdomen and structure of the hair-like tuft of the hind leg (hair-like scales only on apical half of tibia and two basal segments of tarsus in *Melanosphecica*). From all species of *Melittia* Hübner, [1819], *Akaisphecica melanopuncta* gen. et sp. n. can be distinguished by the generic characters, viz. structure of the antenna, both fore- and hindwing venation and male genitalia, and 8th tergal appendix.

Bionomics. The host plant is unknown. Type specimens were collected in April.

Habitat. Unknown.

Distribution. Vietnam.

Material examined. Holotype, ♂, Vietnam, Vang Lom, 11. IV. [19]50, J. Romieux leg. (MHNG); 1 ♂ (paratype), same locality and date as holotype, J. Romieux leg. (collection of O. Gorbunov, Moscow, Russia); 1 ♂ (paratype), Vietnam, Sam Con à Vang Lom, 10. IV. [19]50, J. Romieux leg. (genital preparation No. GA-007) (MHNG).

Etymology. This new species is named after a rather large, mat black spot on the anterior transparent area of the forewing.

Acknowledgements

We would like to express our cordial thanks to Prof. Dr C. M. Naumann (Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, Germany), Dr D. B. Burckhardt (Muséum d'Histoire Naturelle, Genève, Switzerland) and Dr S. I. Golovatch (Institute

for the Problems of Ecology & Evolution, Russian Academy of Sciences, Moscow, Russia) for their help in our investigation. We are indebted to Dr M. Owada (National Science Museum (Natural History), Tokyo, Japan) for taking pictures of the abdomens (Figs 4-5). We also have to cordially thank Dr S.I. Golovatch one more for his linguistic help.

References

- Arita, Y. and O. G. Gorbunov, 1995. A revision of the genus *Heterosphecia* Le Cerf, 1916 (Lepidoptera : Sesiidae, Osminiini). *Tinea* **14**: 131-141.
- Hampson, G. F., [1893]. *The Fauna of British India, including Ceylon and Burma* (Moths) **1**. xxiii, 527 pp. Taylor and Francis, London.
- Le Cerf, F., 1916. Explication des planches. In Oberthür, C., *Étud. Lépid. comp.* **12** (1): 14 pp., pls 373-381.
- , 1917. Contributions a l'étude des Aegeriidae: Description et iconographie d'espèces et de formes nouvelles ou peu connues. *Ibid.* **14**: 137-388.

摘 要

東洋区の Osminiini 族の新属新種 (鱗翅目, スカシバガ科) (Oleg G. Gorbunov・有田 豊)

スイス, ジュネーブの自然史博物館のスカシバガのコレクションを調査中に腹部第8節背面から大変長い紐状の突起のある奇妙なスカシバガを見いだした (Fig. 1). これは精査の結果, Osminiini 族の新属新種と認められるので記載し, 東洋区の Osminiini 族の検索表も作成した.

Akaisphecia melanopuncta Gorbunov et Arita gen. et sp. n. (Figs 1-4)

ベトナムの Vang Lom (この地名は現在の地図には見いだせない) で得られた3♂によって記載した. この新属新種は, 腹部第8節背面から腹部とほぼ同じ長さの長い紐状の鱗粉が左右から出て, それが1本の紐状の突起になっている. 大変ユニークなスカシバガである.

(Accepted November 7, 1994)